MINOR SOURCE OPERATING PERMIT
OFFICE OF AIR QUALITY

GKN Sinter Metals, Inc.
Becks Mill Road
Salem, IN 47167

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this permit.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Operation Permit No.: 175-15094-00011	
Original signed by Paul Dubenetzky Issued by: Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: February 4, 2002 Expiration Date: February 4, 2007

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

The Permittee owns and operates an iron sintering plant.

Responsible Official:	Jim Stengel
Source Address:	Becks Mill Road, Salem, IN 47167
Mailing Address:	P.O. Box 312, Salem, IN 47167-0312
Phone Number:	812-883-3381
SIC Code:	3714
County Location:	Washington
County Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Minor Source, under PSD Rules Minor Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary

This source is approved to operate the following emissions units and pollution control devices:

(a) Five (5) natural gas fired sintering furnaces, identified as 507-01 through 507-05, each rated at 2.45 million Btu per hour heat input and 600 pounds of iron powder per hour.

(b) Sixteen (16) natural gas fired sintering furnaces, identified as 507-07 through 507-22, each rated at 2.45 million Btu per hour heat input and 600 pounds of iron powder per hour.

(c) One (1) natural gas fired sintering furnace, identified as 507-24, rated at 3.25 million Btu per hour heat input and 2000 pounds of iron powder per hour.

(d) Two (2) natural gas fired sintering furnaces, identified as 511-03 and 511-05, each rated at 0.145 million Btu per hour heat input and 600 pounds of iron powder per hour.

(e) One (1) electric sintering furnace, identified as 526-06, rated at 200 pounds of iron powder per hour.

(f) Two (2) powder blending units, identified as 530-01 and 530-02, each rated at 1470 pounds of iron powder per hour, controlled by one (1) dust collector.

(g) Secondary machining operations consisting of wet grinding, lathe turning, drilling, tapping, and vibratory deburring.

(h) One (1) dust collector, identified as 530-7.

(i) Five (5) natural gas fired endothermic gas generators, identified as 507-100 through 507-105, each rated at 0.25 million Btu per hour heat input.

(j) Two (2) natural gas fired endothermic gas generators, identified as 507-108 and 507-109, each rated at 0.25 million Btu per hour heat input.

(k) Two (2) natural gas fired endothermic gas generators, identified as 507-111 and 507-112, each rated at 0.25 million Btu per hour heat input.

(l) One (1) natural gas fired endothermic gas generator, identified as 507-113, rated at 0.75 million Btu per hour heat input.

(m) One (1) natural gas fired boiler, identified as 512-22-2, rated at 0.0382 million Btu per hour heat input. This boiler was constructed in 1971.

(n) One (1) natural gas fired boiler, identified as 512-01, rated at 0.126 million Btu per hour heat input. This boiler was constructed in June, 1995.

SECTION B GENERAL CONDITIONS

B.1 Permit No Defense [IC 13]

Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a permit under 326 IAC 2-6.1.

B.2 Definitions

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

B.3 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.4 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

(a) The total source potential to emit of all criteria pollutants is less than 250 tons per year. Therefore the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.

(b) Any change or modification which may increase potential to emit to 250 tons per year of any regulated pollutant from this source shall cause this source to be considered a major source under PSD, 326 IAC 2-2 and 40 CFR 52.21, and shall require approval from IDEM, OAQ prior to making the change.

(c) Any change or modification which may increase potential to emit to 10 tons per year of any single hazardous air pollutant, 25 tons per year of any combination of hazardous air pollutants, or 100 tons per year of any other regulated pollutant from this source, shall cause this source to be considered a major source under Part 70 Permit Program, 326 IAC 2-7, and shall require approval from IDEM, OAQ prior to making the change.

B.5 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) after issuance of this permit, including the following information on each emissions unit:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

(b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that failure to implement the Preventive Maintenance Plan does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) PMPs shall be submitted to IDEM, OAQ upon request and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its Preventive Maintenance Plan whenever lack of proper maintenance causes or contributes to any violation.

B.6 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

(a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application should be certified by the "authorized individual" as defined by 326 IAC 2-1.1-1.

(c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

B.7 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) Have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;

(c) Inspect, at reasonable times, any processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;

(d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.8 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)]:

(a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.

(b) The written notification shall be sufficient to transfer the permit to the new owner by a notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).

(c) IDEM, OAQ shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

B.9 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit may be revoked for any of the following causes:

(a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes, in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

C.1 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.2 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

Testing Requirements

C.3 Performance Testing [326 IAC 3-6]

(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

(b) All test reports must be received by IDEM, OAQ within forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ if the source submits to IDEM, OAQ, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the “authorized individual” as defined by 326 IAC 2-1.1-1.

Compliance Monitoring Requirements

C.4 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.5 Monitoring Methods [326 IAC 3]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

C.6 Actions Related to Noncompliance Demonstrated by a Stack Test

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected emissions unit while the corrective actions are being implemented. IDEM, OAQ shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAQ within thirty (30) days of receipt of the notice of deficiency. IDEM, OAQ reserves the authority to use enforcement activities to resolve noncompliant stack tests.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected emissions unit.

The documents submitted pursuant to this condition do not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

Record Keeping and Reporting Requirements

C.7 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.8 Monitoring Data Availability [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.

(b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.

(c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.

(d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, such reasons must be recorded.

(e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

(f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.9 General Record Keeping Requirements [326 IAC 2-6.1-2]

(a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAQ representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Records of required monitoring information shall include, where applicable:

(1) The date, place, and time of sampling or measurements;

(2) The dates analyses were performed;

(3) The company or entity performing the analyses;

(4) The analytic techniques or methods used;

(5) The results of such analyses; and

(6) The operating conditions existing at the time of sampling or measurement.

(c) Support information shall include, where applicable:

(1) Copies of all reports required by this permit;

(2) All original strip chart recordings for continuous monitoring instrumentation;

(3) All calibration and maintenance records;

(4) Records of preventive maintenance shall be sufficient to demonstrate that failure to implement the Preventive Maintenance Plan did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported. All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.

(d) All record keeping requirements not already legally required shall be implemented when operation begins.

C.10 Annual Notification [326 IAC 2-6.1-5(a)(5)]

(a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.

(b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.

(c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Compliance Data Section, Office of Air Quality
Indiana Department of Environmental Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

(d) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(a) Five (5) natural gas fired sintering furnaces, identified as 507-01 through 507-05, each rated at 2.45 million Btu per hour heat input and 600 pounds of iron powder per hour.

(b) Sixteen (16) natural gas fired sintering furnaces, identified as 507-07 through 507-22, each rated at 2.45 million Btu per hour heat input and 600 pounds of iron powder per hour.

(c) One (1) natural gas fired sintering furnace, identified as 507-24, rated at 3.25 million Btu per hour heat input and 2000 pounds of iron powder per hour.

(d) Two (2) natural gas fired sintering furnaces, identified as 511-03 and 511-05, each rated at 0.145 million Btu per hour heat input and 600 pounds of iron powder per hour.

(e) One (1) electric sintering furnace, identified as 526-06, rated at 200 pounds of iron powder per hour.

(f) Two (2) powder blending units, identified as 530-01 and 530-02, each rated at 1470 pounds of iron powder per hour, controlled by one (1) dust collector.

(g) Secondary machining operations consisting of wet grinding, lathe turning, drilling, tapping, and vibratory deburring.

(h) One (1) dust collector, identified as 530-7.

Emission Limitations and Standards

D.1.1 Particulate Matter (PM) [326 IAC 6-3-2(c)]

Pursuant to 326 IAC 6-3-2 (Particulate Emissions Limitations), particulate matter (PM) emissions from sintering operations shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

For a process weight rate of 8.0 tons per hour, this equation provides an emission limit of 16.51 pounds per hour.

Compliance Determination Requirements

D.1.2 Testing Requirements

The Permittee is not required to test this facility by this permit. However, IDEM may require compliance testing when necessary to determine if the facility is in compliance. If testing is required by IDEM, compliance with the limit specified in Condition D.1.1 shall be determined by a performance test conducted in accordance with Section C - Performance Testing.

Compliance Monitoring Requirements

D.1.3 Monitoring

There are no specific monitoring requirements for this facility.

Record Keeping and Reporting Requirements

D.1.4 Record Keeping Requirements

There are no specific record keeping requirements for this facility.

D.1.5 Reporting Requirements

There are no specific reporting requirements for this facility.

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(i) Five (5) natural gas fired endothermic gas generators, identified as 507-100 through 507-105, each rated at 0.25 million Btu per hour heat input.

(j) Two (2) natural gas fired endothermic gas generators, identified as 507-108 and 507-109, each rated at 0.25 million Btu per hour heat input.

(k) Two (2) natural gas fired endothermic gas generators, identified as 507-111 and 507-112, each rated at 0.25 million Btu per hour heat input.

(l) One (1) natural gas fired endothermic gas generator, identified as 507-113, rated at 0.75 million Btu per hour heat input.

Emission Limitations and Standards

D.2.1 Emission Limitations

There are no specific emission limitations for this facility.

Compliance Determination Requirements

D.2.2 Testing Requirements

The Permittee is not required to test this facility by this permit.

Compliance Monitoring Requirements

D.2.3 Monitoring

There are no specific monitoring requirements for this facility.

Record Keeping and Reporting Requirements

D.2.4 Record Keeping Requirements

There are no specific record keeping requirements for this facility.

D.2.5 Reporting Requirements

There are no specific reporting requirements for this facility.

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

(m) One (1) natural gas fired boiler, identified as 512-22-2, rated at 0.0382 million Btu per hour heat input. This boiler was constructed in 1971.

(n) One (1) natural gas fired boiler, identified as 512-01, rated at 0.126 million Btu per hour heat input. This boiler was constructed in June, 1995.

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.3.1 326 IAC 6-2 (Particulate Emission Limitations For Sources of Indirect Heating)

Pursuant to 326 IAC 6-2-3 (Particulate Emissions Limitations for Facilities Constructed prior to September 21, 1983), PM from the one (1) boiler identified as 512-22-2 shall not exceed 0.8 pounds per million British thermal units.

D.3.2 326 IAC 6-2 (Particulate Emission Limitations For Sources of Indirect Heating)

Pursuant to 326 IAC 6-2-4 (Particulate Emissions for Sources of Indirect Heating), PM from the one (1) boiler identified as 512-01 shall not exceed 0.6 pounds per million British thermal units.

Compliance Determination Requirements

D.3.3 Testing Requirements

The Permittee is not required to test this facility by this permit.

Compliance Monitoring Requirements

D.3.4 Monitoring

There are no specific monitoring requirements for this facility.

Record Keeping and Reporting Requirements

D.3.5 Record Keeping Requirements

There are no specific record keeping requirements for this facility.

D.3.6 Reporting Requirements

There are no specific reporting requirements for this facility.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	**GKN Sinter Metals, Inc.**
Address:	**Becks Mill Road**
City:	**Salem, IN 47167**
Phone #:	**812-883-3381**
MSOP #:	**175-15094-00011**

I hereby certify that GKN Sinter Metals, Inc. is:

9 still in operation. **9** no longer in operation.

I hereby certify that GKN Sinter Metals, Inc. is:

9 in compliance with the requirements of MSOP 175-15094-00011.

9 not in compliance with the requirements of MSOP 175-15094-00011.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT
25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____,
25 TONS/YEAR NITROGEN OXIDES?_____, 25 TONS/YEAR VOC ?_____,
25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____,
25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?___, 25 TONS/YEAR FLUORIDES ?_____,
100 TONS/YEAR CARBON MONOXIDE ?_____,
10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT?____,
25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____,
1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR
IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____.
EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY: GKN Sinter Metals, Inc. PHONE NO. 812-883-3381

LOCATION: (CITY AND COUNTY) Becks Mill Road, Salem, IN 47167 (Washington County)

PERMIT NO. 175-15094-00011

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON:_____
_____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 19____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 19____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER:_____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____
_____

MEASURES TAKEN TO MINIMIZE EMISSIONS:_____
_____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES:_____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS:_____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT:_____
INTERIM CONTROL MEASURES: (IF APPLICABLE)_____
_____
_____

MALFUNCTION REPORTED BY:_____TITLE:_____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY:_____DATE:_____TIME:_____

*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Minor Source Operating Permit (MSOP)

Source Background and Description

Source Name:	**GKN Sinter Metals, Inc.**
Source Location:	**Becks Mill Road, Salem, IN 47167**
County:	**Washington**
SIC Code:	**3714**
Old Registration No.:	**175-12587-00011**
Old Registration Issuance Date:	**November 30, 2000**
Application No.:	**175-15094-00011**
Permit Reviewer:	**Allen R. Davidson**

On November 28, 2001, the Office of Air Quality (OAQ) received an application from GKN Sinter Metals, Inc. relating to the construction and operation of one (1) natural gas fired sintering furnace, identified as 507-24, rated at 3.25 million Btu per hour heat input and 2000 pounds of iron powder per hour.

History

GKN Sinter Metals, Inc. was issued a registration for an iron sintering plant on November 30, 2000. This application is the first revision since that date.

Enforcement Issues

IDEM is aware that this change was made before receipt of an application. IDEM is reviewing this matter and will take appropriate action.

Stack Summary

The following stack information will be added as a result of this application:

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
S50	Furnace 507-24	26	1	100	275
S51	Furnace 507-24	26	1.25	300	300

Recommendation

The staff recommends to the Commissioner that the emission source be issued a minor source operating permit. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on November 28, 2001.

Emission Calculations

See Appendix A of this document for detailed emissions calculations regarding Furnace 507-24. (2 pages)

See Appendix A of the Technical Support Document for Registration 175-12587-00011, for detailed emissions calculations regarding the rest of the facilities at the emission source.

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

The following table reflects the existing source potential to emit. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential To Emit (tons/year)
PM	4.1
PM-10	5.5
SO_2	0.2
VOC	1.3
CO	20.3
NOX	24.2

HAP's	Potential To Emit (tons/year)
TOTAL	< 0.5

The potential to emit (as defined in 326 IAC 2-5.1-2) of CO and NOX were less than twenty-five (25) tons per year, but greater than ten (10) tons per year. Therefore, the source was issued a registration on November 30, 2000.

This source is not a major source for Prevention of Significant Deterioration, 326 IAC 2-2. No attainment regulated pollutant has the potential to emit at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

The revision's potential to emit is follows:

Pollutant	Potential To Emit (tons/year)
PM	0.1
PM-10	0.1
SO_2	0.0
VOC	0.1
CO	1.2
NOX	1.4

HAP's	Potential To Emit (tons/year)
TOTAL	negligible

The source's potential to emit nitrogen oxides (NOX) remains less than 100 tons per year, but it becomes greater than 25 tons per year as a result of this revision. Therefore, the source will become a minor source subject to 326 IAC 2-6.1.

This revision is not a major modification for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 because the increase in potential to emit every attainment pollutant is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

County Attainment Status

The source is located in Washington County.

Pollutant	Status
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	attainment
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Washington County has been designated as attainment or unclassifiable for ozone.

Washington County has also been classified as attainment or unclassifiable for all other pollutants. Therefore, emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Federal Rule Applicability

There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.

There are no National Emission Standards for Hazardous Air Pollutants (NESHAP)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants)

This source is not subject to 326 IAC 2-4.1-1 (New Source Toxics Control). The source was existing as of July 27, 1997. Also, it does not have potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAPs.

326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), because it does not have the potential to emit more than one hundred (100) tons per year of any pollutant specified in the rule.

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 6-2-3 (Particulate Emissions Limitations for Facilities Constructed prior to September 21, 1983)

The one (1) boiler identified as 512-22-2, constructed in 1971, with a total heat input capacity of 0.0382 million British thermal units per hour, must comply with the PM emission limitation of 326 IAC 6-2-3. This limitation is based on the following equation is given in 326 IAC 6-2-3:

$$Pt = C \times a \times h / 76.5 \times Q^{0.75} \times N^{0.25}$$

where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

C = Maximum ground level concentration with respect to distance from the point source at the "critical" wind speed for level terrain. This shall equal 50 micrograms per cubic meter for a period not to exceed a sixty (60) minute time period.

N = Number of stacks in fuel burning operation.

a = Plume rise factor which is used to make allowance for less than theoretical plume rise. The value 0.67 shall be used for Q less than or equal to 1,000 mmBtu/hr heat input. The value 0.8 shall be used for Q greater than 1,000 mmBtu/hr heat input.

h = Stack height in feet.

For the one (1) boiler:
$Pt = 50 \times 0.67 \times 26.0 / 76.5 \times (0.0382)^{0.75} \times 1^{0.25} = 131.77$ lb/MMBtu

Pursuant to 326 IAC 6-2-3(d), Pt for all facilities used for indirect heating purposes which were existing and in operation on or before June 8, 1972 shall not exceed 0.8 pound per million British thermal units. Therefore, the one (1) boiler is limited to emissions of 0.8 pound per million British thermal units.

Based on Appendix A of the Technical Support Document for Registration 175-12587-00011, the potential to emit PM emissions from the one (1) boiler, limited to 0.8 pound PM per million British thermal units, is 0.0003 tons per year.

0.0003 tons/yr × (2000 lbs/ton / 8760 hrs/yr) = 0.00007 lbs/hr
(0.00007 lbs/hr /0.0382 MMBtu/hr) = 0.002 lbs PM per MMBtu

Therefore, the boiler will comply with this rule.

326 IAC 6-2-4 (Particulate Emissions Limitations for Facilities Constructed after September 21, 1983)

The one (1) boiler known as 512-01, constructed on June 5, 1995, must comply with the requirements of 326 IAC 6-2-4. The emission limitations are based on the following equation is given in 326 IAC 6-2-4:

$$Pt = 1.09/Q^{0.26}$$

where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input

Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

The source maximum operating capacity rating of the source's two boilers is 0.1642 million British thermal units per hour. Pursuant to 326 IAC 6-2-4(a), for Q less than 10 million British thermal units per hour, Pt shall not exceed 0.6 pound per million British thermal units. Therefore, the one (1) boiler is limited to emissions of 0.6 pound per million British thermal units.

Based on Appendix A of the Technical Support Document for Registration 175-12587-00011, the potential PM emission rate is:

0.001 ton/yr × (2000 lbs/ton / 8760 hrs/yr) = 0.0002lb/hr
(0.0002 lb/hr / 0.75 MMBtu/hr) = 0.0003lb PM per MMBtu

Therefore, the boiler will comply with this rule.

326 IAC 6-3-2 (Process Operations)

Pursuant to 326 IAC 6-3 (Process Operations), the PM emission rate from the sintering furnaces, powder blending units and machining operations shall be limited by the following equation for process weight rates up to sixty thousand (60,000) pounds per hour:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

For a process weight rate of 8.0 tons per hour, this equation provides an emission limit of 16.51 pounds per hour. Control equipment is not needed in order to comply with this limit.

Conclusion

This emission source shall be subject to the conditions of the attached Minor Source Operating Permit, No 175-15094-00011.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: GKN Sinter Metals
Address City IN Zip: Becks Mill Road, Salem, IN 47167
ID: 175-15094-00011
Reviewer: Allen R. Davidson
Date: 02/05/02

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
3.250	28.5

Pollutant

	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.1	0.0	1.4	0.1	1.2

*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	2.989E-05	1.708E-05	1.068E-03	2.562E-02	4.840E-05

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	7.118E-06	1.566E-05	1.993E-05	5.409E-06	2.989E-05

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98).
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors confirm that the correct factor is used (i.e., condensable included/not included).

Appendix A: Emissions Calculations

Company Name: GKN Sinter Metals
Address City IN Zip: Becks Mill Road, Salem, IN 47167
ID: 175-15094-00011
Reviewer: Allen R. Davidson
Date: 02/05/02

The following calculations determine the emission limit under 326 IAC 6-2-3:

Total source maximum boiler operating capacity:	0.0382	MMBtu
Number of stacks in boiler operations:	1	
Average stack height:	26	feet

50 ug/m3 * 0.67 * 26 feet = 0.8 lb/MMBtu by default
76.5 * (0.0382) ^0.75 * 1 ^0.25

0.8 lb/MMBtu * 0.0382 MMBtu/hr * 8760 hr/yr / 2000 lb/ton = 0.133853 ton/yr (will comply)

The following calculations determine the emission limit under 326 IAC 6-2-4:

1.09 / 0.1642 ^ 0.26 = 0.6 lb/MMBtu by default

0.6 lb/MMBtu * 0.1642 MMBtu/hr * 8760 hr/yr / 2000 lb/ton = 0.431518 ton/yr (will comply)

The following calculations determine the emission limit under 326 IAC 6-3-2:

5	units *	600 lb/hr =	3000	lb/hr
16	units *	600 lb/hr =	9600	lb/hr
1	units *	2000 lb/hr =	2000	lb/hr
2	units *	600 lb/hr =	1200	lb/hr
1	units *	200 lb/hr =	200	lb/hr
	Total:		16000	lb/hr = 8 ton/yr

E = 4.1 * (8.0 ^ 0.67) = 16.51 lb/hr (will comply)
16.51 lb/hr * 8760 hr/yr / 2000 lb/ton = 72.33 ton/yr